




UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,891	12/29/2004	Takashi Yamamizu	1141/73452	2719
23432	7590	01/27/2006	EXAMINER	
COOPER & DUNHAM, LLP 1185 AVENUE OF THE AMERICAS NEW YORK, NY 10036			SHIPMAN, JEREMIAH E	
			ART UNIT	PAPER NUMBER
			2859	

DATE MAILED: 01/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/519,891	Applicant(s) YAMAMIZU ET AL. 	
	Examiner Jeremiah Shipman	Art Unit 2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-3 and 3-9 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 6 recites the limitation "the bed is disposed so that the top plate is inserted from a position in the vicinity of the column with large cross sectional area toward the center of the pair of magnets". The parent claim 1, however, requires that "the bed is disposed so that the top plate is inserted toward the center of the pair of magnets from the side of the column with small cross sectional area...". Thus, claim 6 is inconsistent with its parent claim as no direction from which the bed could be inserted would satisfy both limitations.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 5-7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minas et al. (US 2002/0145426) in view of Kaufman et al. (US 5,517,121). Minas et al. disclose a magnetic resonance imaging apparatus (Par 1) comprising a gantry including a pair of upper magnet and lower magnet arranged oppositely and concentrically in a vertical direction, sandwiching a measurement space to which an object to be examined is inserted (Par 33-34, Fig 1) and a pair of columns for supporting the upper magnet installed over the outer parts of the upper magnet and the lower magnet in the vertical direction (Par 34, lines 6-8), a bed on which the object is placed, including a top plate inserted into the measurement space (Par 3, Par 34 lines 8-10), wherein the pair of columns is oppositely arranged with respect to a central axis of the upper magnet and lower magnet (par 14, lines 4-6; par 34 lines 6-8) and a cross sectional area of one column of the pair of columns is made smaller than that of the other (par 14 lines 7-10; par 15 lines 6-8).

Minas et al. do not teach that the bed is disposed so that the top plate is inserted toward the center of the pair of magnets from the side of the column with small (or large) cross sectional area with respect to a line perpendicular to a line connecting the centers of the pair of columns and passing through the center of the pair of magnets, or the limitations of claims 5-7 or 10.

Regarding claims 1 and 6, Kaufman et al. teach a MRI apparatus comprising two vertical support columns separating the magnets and between which a patient bed is inserted (col 1, lines 8-14), wherein the longitudinal axis of the patient bed is disposed non-perpendicularly with respect to the plane passing through the center of each

Art Unit: 2859

support column (col 2, lines 53-66; Fig 3B; col 5, lines 10-12—Kaufman teaches that the bed may be inserted from the direction of the vicinity of either pillar) in order to allow better access to the patient (col 3, line 64-67; col 4, lines 1-7, 19-27, 60-64).

Regarding claims 5 and 10, Kaufman et al. teach that the direction of the line perpendicular to the line connecting the centers of the pair of columns and passing through the center of the pair of magnets intersects with the direction of the top plate insertion at an angle of 30 degrees (Fig 3B, 4B; col 5, lines 10-12).

Regarding claim 7, Kaufman et al. teach that the bed may be moved about the periphery of the gantry so that the bed may be inserted from various angles (col 5, lines 13-17).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to insert the patient support bed into the magnet gantry of Minas et al. at a non-perpendicular angle as above as per Kaufman et al., in order to achieve the better access to the patient sought by Kaufman et al (col 3, line 64-67; col 4, lines 1-7, 19-27, 60-64).

Regarding claim 2, Minas et al. further teach that the width of the column with the small cross-sectional area in a direction perpendicular to a line connecting the centers of the pair of columns is $\frac{1}{2}$ or smaller of that of the other column (Minas et al., Par 15, lines 6-8; Fig 10).

Regarding claim 9, Minas et al. further teach that the side surface of the column facing the magnet center is tapered (Fig 8, 10) with its top pursed toward an end (Fig 6A).

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minas et al. in view of Kaufman et al. as applied to claims 1, 2, 5-7, 9 and 10 above, and further in view of Chari et al. (US Patent No. 5,436,607). The combination of Minas et al. and Kaufman et al. does not teach the pair of columns having a shape curved toward outside.

Chari et al teach an open MRI magnet design in which the support **18** is bulged outward in the center (Col 2, lines 48-49). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to apply this design feature of Chari et al to the support structure of Minas et al. and Kaufman et al., in order to provide better access to the imaging volume (Chari et al., col 2, lines 28-32).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minas et al. in view of Kaufman et al. as applied to claims 1, 2, 5-7, 9 and 10 above, and further in view of Danby et al. (US 6,828,792). The combination of Minas et al. and Kaufman et al. does not teach the pillar with small cross sectional area having a substantially rectangular cross section, and its longitudinal direction corresponding to the diameter direction of the magnet.

Danby et al. teach a support structure for an open MRI apparatus magnet (col 2, lines 14-35) wherein the support columns may be maintained at a required cross-sectional area without impairing access to the patient by making them rectangular in cross section with their longitudinal axis oriented in horizontal directions away from the

Art Unit: 2859

pole axis (col 11, lines 17-28). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to apply this design principle of Danby et al. to the support pillars of Minas and Kaufman, in order to maintain sufficient cross sectional area to return the magnetic flux while avoiding obstructing access to the patient (Danby, col 11, lines 17-28).

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

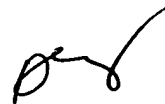
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremiah Shipman whose telephone number is (571)272-8439. The examiner can normally be reached on Monday-Friday, 8:30am-5:00pm.

Art Unit: 2859

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571)272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JS



Diego Gutierrez
Supervisory Patent Examiner
Technology Center 2800